

ABSTRACT OF THE DISCLOSURE

Rinsing or sealing solutions comprising a rare earth element and a valence stabilizer for barrier films. The treated films contain a rare earth/valence stabilizer complex. The rare earth element is selected from cerium, praseodymium, terbium, or combinations thereof, and at least
5 one rare earth element is in the tetravalent oxidation state. The rinsing or sealing solution may also contain an optional preparative or solubility control agent. The oxidized rare earth element is present in the coating in a “sparingly soluble” form. The valence stabilizers can be either inorganic or organic in nature. A number of rare earth/valence stabilizer combinations that match the performance of conventional hexavalent chromium systems are presented.